IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

BAD RIVER BAND OF THE LAKE SUPERIOR TRIBE OF CHIPPEWA INDIANS OF THE BAD RIVER RESERVATION,

Plaintiff,

v.

ENBRIDGE ENERGY COMPANY, INC., and ENBRIDGE ENERGY, L.P.,

Defendants.

ENBRIDGE ENERGY COMPANY, INC., and ENBRIDGE ENERGY, L.P.,

Counter-Plaintiffs,

v.

BAD RIVER BAND OF THE LAKE SUPERIOR TRIBE OF CHIPPEWA INDIANS OF THE BAD RIVER RESERVATION and NAOMI TILLISON, in her official capacity,

Counter-Defendants.

Case No. 3:19-cv-00602-wmc

Judge William M. Conley
Magistrate Judge Stephen L. Crocker

BAD RIVER BAND OF THE LAKE SUPERIOR TRIBE OF CHIPPEWA INDIANS' STATEMENT OF PROPOSED FINDINGS OF FACT IN SUPPORT OF ITS EMERGENCY MOTION FOR INJUNCTIVE RELIEF

Plaintiff Bad River Band of the Lake Superior Tribe of Chippewa Indians submits its Statement of Proposed Findings of Fact in support of its Emergency Motion for Injunctive Relief as follows:

A. Substantial Bank Loss Has Taken Place with Alarming Rapidity.

1. At the E series of monuments, just 11 feet of bank remains between the Bad River and Line 5. Decl. of Ian B. Paton (Paton Decl.) ¶ 4.

2. At the M3 series, 12.5 feet remains; at a point between the E and F series, 13.5 feet of bank remains; at the D series, 14.5 feet remains; and at the F series, the figure is 16.5 feet. *Id.* ¶¶ 4, 6.d., 6.e.

3. At the M3 series, the distance between bank and pipeline was measured at 34 feet in February 2023. *Id.* ¶ 6.b.

4. In one week alone—from April 29 to May 5—the bank decreased by 10.5–11.5 feet, eroding by nearly half from 23–24 feet to 12.5 feet. *Id.* ¶ 6.b.

5. There have been losses of 14.5 feet at the E series, more than 12 feet between the E and F series, and 9 feet at the F series, all in less than a month. *Id.* ¶ 6.c.–e.

6. At the D series, 19.5 feet has been lost in the last month. *Id.* ¶ 6.a. Here, Enbridge Camera 4—itself now within 4 feet of the top of the bank—captured images showing 3–4 feet of bank loss at both the D and the E series in a single 24-hour period between May 3 and May 4, this at a time when flows in the river were only 6,000 cfs. *Id.* ¶¶ 7, 10 (Figure 3).

7. In the Parties' May 1, 2023 Joint Status Report Regarding Meander Conditions ("Joint Status Report"), Dkt. 627, four monuments had been lost at the M3 and F series, but just a week later, another four monuments have been lost all along the bank, including two much closer to the pipeline at the D and E series. *Compare id.* at 4 (Figure 2) & 6 (Figure 3) *with* Paton Decl. at 6 (Figure 1) & 9 (Figure 4).

8. All this erosion and monument loss has taken place in conjunction with flow levels that are far from extreme. Flows have peaked three times: on April 13 at 13,900 cubic feet per second (cfs), or less than a 10-year event; on April 21 at 10,400 cfs; and on May 1 at 10,900 cfs, with the latter two being less than a 5-year event. Joint Status Report, Dkt. 627 at 3; Paton Decl. ¶ 12 & Figure 7.

9. While these flows are significant, none comes remotely close to the flows of record for this stretch of the Bad River. Paton Decl. ¶ 14.c. (pp. 14–15).

B. Substantial Bank Loss is Likely to Continue.

10. Drone imagery from May 6 shows a block of channel bank with a tree collapsing into the Bad River immediately downstream from the narrowest portion of the meander neck. *Id.* ¶ 8 & Figure 5. This bank failure occurred while the flow rate of the river was less than 4,000 cfs, or a 1- to 2-year event. *Id.* ¶ 8.

11. Site visit photographs show signs that more bank erosion is to come. Along much of the bank, including in the areas where the river is now closest to the pipeline, there are undercut areas where roots are visible and exposed. *Id.* ¶ 14.a. & Figure 8.

12. Undercut areas are prone to collapse and bank loss. *Id.* ¶ 14.a.

13. On top of the bank, cracks have formed that indicate locations where the bank is more susceptible to large slope failures into the river. *Id.* ¶ 9 & Figure 6.

14. The higher water levels in the river have provided some measure of support for the saturated and unstable bank. *Id.* ¶ 14.b.

15. As the waters recede, the lower levels of bank are losing that support, with additional sloughing as a result. *Id.* ¶ 14.b.

16. This is a familiar and predictable pattern, one not dependent on further storm events at the meander. *Id.* ¶ 14.b.

17. As the bank moves ever closer to Line 5, the rate of erosion will become ever more unpredictable. The soil and vegetation adjacent to the pipeline may be different than the conditions near the current edge of the bank. *Id.* ¶ 14.e. If the soil in the pipeline trench is less compact (having already been disturbed once) or if there is less root mass to provide stability to the soil in the right of way as a result of historic clearing, this could accentuate the rate of erosion. *Id.* ¶ 14.e.

18. Additional rainfall events, even if relatively small, could lead to further erosion as well. *Id.* ¶ 14.c.–d.

19. Since 2014, precipitation events causing heightened flows have occurred in the months of May, June, July, August, September, and October, with July 2016 being the flood of record. *Id.* ¶ 14.c.; WWE Report, Dkt. 268-1, at PDF p. 65 (Table 3).

20. Heightened flows from such events do not have to be extraordinary to cause bank movement. In April 2020, 5 feet of erosion was observed in a one-week period associated with a peak flow of less than 8,000 cfs, which corresponds to a 2-year event. Paton Decl. ¶ 14.d.; WWE Report, Dkt. 268-1, at pp. PDF 70–73. And there is no more dramatic evidence of this point than the events of the past few

weeks, where 21.5 feet and 19.5 feet of bank loss has been observed at the M3 and D series, respectively, in the aftermath of 5–10 year flows. Paton Decl. ¶ 6.a-b.

C. A Significant Risks Exists that the Pipeline Could Be Undermined and Rupture in the Same Event.

21. Once Line 5 is exposed at the meander neck, the length of exposed pipeline could expand rapidly and unpredictably, resulting in pipeline failure and the release of oil in as little as one storm event. Testimony of Hamish Weatherly (Enbridge expert), Dkt. 608, at 17:7–18:11, 18:21–23; Dkt. 617 at 7–8 (¶7.c.–e.) (describing piping, WWE experience with buried pipelines becoming completely exposed and unsupported for distances of 100 feet or more during single flood events, engineering literature and case studies showing examples of exposure and rupture of pipelines in single flood event, and risk of smaller flood events resulting in significant erosion in short time); WWE Report, Dkt. 268, at PDF p. 39 ("Once a portion of the pipeline becomes exposed, the length of exposure will continue to expand, unpredictably and potentially quite rapidly. A substantial length of pipeline could become exposed in a single high flow event, or over the course of several high flow events within a short period of time."); WWE Report, Dkt. 268-2, at PDF p. 12 ("As water impacts the pipeline at the juncture where the pipeline intersects with intact soil, some of the water's force will be redirected toward the soil, producing rapid erosion. As the silty-sandy floodplain deposits are exposed to the erosive impacts of the Bad River, the cross section for water flow will become larger. While the precise rate of the progression of the pipeline exposure cannot be accurately predicted, it is foreseeable that a substantial length of pipeline could be exposed in a single high flow event, or over the course of several high flow events occurring within a short period of time."); Paton Decl. ¶ 14.f.

22. In 2011, the Silvertip pipeline became exposed and undermined and ruptured into the Yellowstone River during an episode of prolonged flooding. Gerald E. Davis Expert Report, Dkt. 251-1, at PDF p. 10 ("The exposure, damage, and rupture all happened over the course of a single prolonged flood event."); Paton Decl. ¶ 14.f.

23. In 2015, a 24-inch pipeline on the Arkansas River in North Little Rock, Arkansas, failed after its critical span length was exceeded when high water levels eroded the ground cover and exposed the pipeline to the river's flow. WWE Report App. I, Dkt. 484-12, at PDF p. 4.

24. In 2011, a natural gas pipeline on the Missouri River in Iowa ruptured when the pipeline was exposed, exceeded its critical span, and failed during a single bout of flooding. WWE Report App. I, Dkt. 484-12, at PDF p. 5.

25. In 2012, a 12-inch crude pipeline operated by Plains Midstream Canada ruptured after reaching its critical span, likely failing in the same flood that exposed it. WWE Report App. I, Dkt. 484-12, at PDF p. 6.

26. And in 1994, four pipelines were exposed and ruptured during a single flood event on the San Jacinto River in Texas when the river cut a new channel through a meander where the pipelines were located. WWE Report App. I, Dkt. 484-12, at PDF p. 7.

D. A Rupture is Sufficiently Close to Occurring as to Necessitate Action by this Court.

27. There exist at least three different locations where less bank remains than has been lost in the last month, in some cases by a substantial margin. Paton Decl. ¶ 6.a.-c. (D series where 19.5 feet lost and 14.5 feet remains; M3 series where 21.5 feet lost and 12.5 feet remains; E series where 14.5 feet lost and 11 feet remains). The pace and breadth of erosion has been dramatic, with as many as 3–4 feet of bank being lost in a single day and 10.5–11.5 feet in a single week. Paton Decl. ¶¶ 6.b., 7 (Figure 3).

28. Enbridge's former director of operations for the Midwest region, who would oversee any purge of Line 5 on the Bad River Reservation, testified at trial that it would take 48 hours to physically execute a purge of the pipeline segment that crosses the Bad River. Testimony of Trent Wetmore ("Wetmore Testimony") (Enbridge witness), Dkt. 608, at 73:1–2 ("roughly 48-hour process").

29. Enbridge's has elsewhere similarly represented that it would take 45 hours to physically execute the purge. Trial Ex. 70 at PDF p. 10 ("The launching of the pigs and injecting nitrogen will take approximately 45 hours to complete.").

30. This 45- to 48-hour timeline does not include the time required to acquire and stage nitrogen and other necessary equipment. Testimony of Deb Tetteh-Wayoe ("Tetteh-Wayoe Testimony") (Enbridge witness), Dkt. 608, at 3:23–4:18 ("Q: Does that include the time necessary for ordering nitrogen and allowing it to get to the site? A: Nope. That was just for the purge."); *id.* at 5:8–14 ("Q: So am I correct that the actual purge process would require 24 hours notice plus 36 to 46 hours to get the nitrogen on site in addition to the 45 hours that's represented in your plan? A: Yes, there's a few days of prework. Q: So up to about five days? A: Could be. Yeah, usually three—three to five days maybe of prep work."); Wetmore Testimony (Enbridge witness), Dkt. 608, at 72:21–73:2 (explaining that, after "we make the decision [and] we have everything prepared there.… then we would launch—launch those pigs and start that roughly 48-hour process.").

31. Purging requires the pipeline to remain operational. Wetmore Testimony (Enbridge witness), Dkt. 608, at 69:13–71:9 (describing need to continue running oil through the pipeline to transport pigs from launch site at Superior to valve near Reservation where nitrogen would be injected); *see also* Trial Ex. 70 at PDF p. 10 ("Once the first pig is past MLBV 1159.47, the line will be shut down, and the MLBV 1159.47 will be shut. Enbridge will then inject nitrogen at the MLBV

1159.47, pushing the first pig and product downstream approximately 14 miles to MLBV 1173.27.”).

E. The Present Nuisance Results from Enbridge’s Actions and Warrants an Injunction.

32. Enbridge’s applications for its revetment proposals uniformly state that construction must take place during low-flow conditions in late summer or fall. *See* Trial Ex. 131 at 5 (Apr. 2, 2020 tree revetment application) (“Enbridge plans to begin work as soon as conditions are appropriate in the late summer or fall … (low-flow conditions are needed)…. Activities will occur outside the time period from April 1 to June 1 to minimize adverse impacts on fish movement, fish spawning, egg incubation periods and high stream flows.”); Trial Ex. 133 at 21 (Dec. 9, 2020 tree revetment application) (“Enbridge plans to begin work as soon as conditions are appropriate (low-flow) in the late summer or fall ….”); *id.* at 585 (Mar. 9, 2021 tree revetment application) (same); Trial Ex. 138 at 19 (July 23, 2021 rip rap revetment application) (same); Trial Ex. 140 at 21 (May 27, 2022 rip rap revetment application) (same).

33. Discussions regarding valves (the details of which are confidential) have yielded an application by Enbridge to install a check valve on the Reservation, the details of which the parties remain actively engaged on. Decl. of Naomi Tillison ¶ 3.

F. The Band Should Not Be Penalized for its Reluctance to Adopt Enbridge’s Erosion Mitigation Proposals.

34. The Court has found that Enbridge has known it was trespassing since it began doing so in June 2013. *See* Summary Judgment Order and Opinion, Dkt. 360, at 32 (“[O]n this record, a reasonable jury would have to find that Enbridge was a conscious trespasser[.]”); *id.* at 33–34 (rejecting Enbridge’s excuses for having continued trespassing after 2013, finding that “Enbridge was well-aware that it lacked a valid easement over the parcels, and it knew or should have known that federal law required both the Band’s and BIA’s approval.”); *see also* Dkt. 168 at PDF pp. 38–39 & n. 11 (quoting over a dozen internal Enbridge communications acknowledging trespass starting in 2013)

35. As early as 2015, Enbridge officials acknowledged internally that the company needed to make plans to reroute the pipeline. *See* Wetmore Testimony, Dkt. 610, at 8:7–9:11 (testifying about Exhibit 363, an internal email stating that “[w]e’re in the middle of some negotiations with the Tribal Band in Wisconsin over an expired easement renewal along 5. We’re hopeful we’ll be successful in our renewal, but I also want to be working on a relocation and alternative in parallel.”); *see also* Trial Ex. 334 (summary exhibit depicting Enbridge internal reroute timeline) (admitted into evidence, *see* Joint Stipulated List of Exs. Admitted at Trial (“Trial Ex. List”), Dkt. 597, at 14).

36. In the ensuing years, Enbridge employees continued to discuss the need for a reroute. *See* Trial Ex. 334 (summary exhibit depicting timeline of Enbridge internal reroute deliberations from 2015 through 2020) (admitted into evidence, *see* Trial Ex. List, Dkt. 597, at 14); *see also* Wetmore Testimony, Dkt. 610, at 9:16–12:16 (testifying about Exhibit 369, a September 5, 2017 internal Enbridge email about a status update on the Line 5 reroute project).

37. In January 2017, the Band passed a resolution insisting that Enbridge leave its land. *See* Trial Ex. 400 (01/04/17 Bad River Band Tribal Council Resolution No. 1-4-17-738); *see also* Wetmore Testimony, Dkt. 610, at 44:25–45:3 (acknowledging that in January 2017, the Band passed a resolution declaring that it would not renew Enbridge's easements).

38. Enbridge did not file the permit applications for the reroute until February 2020. *See* Wetmore Testimony, Dkt. 610, at 47:4–15 ("February of 2020 is when we actually filed our permit."); *see also* Trial Ex. 334 (summary exhibit depicting timeline of Enbridge internal reroute deliberations from 2015 through 2020) (admitted into evidence, *see* Trial Ex. List, Dkt. 597, at 14).

39. In mid-2019, Enbridge executives choosing between an inner reroute barely skirting the Reservation and more expensive reroutes further from the Reservation expressed a preference for the inner reroute but, knowing that it would "trigger staunch opposition" from the Band, they did not inform the Band of their intent to pursue the inner route. *See* Trial Ex. 334 (summary exhibit depicting timeline of Enbridge internal reroute deliberations from 2015 through 2020) (admitted into evidence, *see* Trial Ex. List., Dkt. 597, at 14); *see also* Trial Ex. 371 at p. 6 (PowerPoint slide with notes conveying the inner and outer Line 5 Potential Reroute Options).

40. Internally, some Enbridge employees expressed concern that Enbridge was misleading the public by messaging that the company was considering other reroute paths despite intending to pursue the reroute path that barely skirted the Bad River Reservation. *See, e.g.*, Designated Dep. Testimony of Sara Ploetz, Dkt. 564,[1] at 108:22–109:3 (testifying about internal communication in which Ms. Ploetz had written, "Does it seem disingenuous if we go public this Thursday or Friday with very general messaging on evaluating different alternatives and turn around a week and a half later with boots on the ground survey of a specific route?").

41. At trial, Enbridge's excuse for not having pursued a reroute earlier was that it would have looked "insincere" to take steps toward a reroute while engaged in mediation with the Band from May 2017 to July 2019. *See* Wetmore Testimony,

[1] This particular docket entry was filed under seal, but redactions have not been made on this citation because there is a publicly accessible version of the same transcript available at Dkt. 438.

Dkt. 610, at 45:12–46:13 (testifying that mediation lasted from around May 2017 to July 2019); *id.* at 45:22–46:9, 54:7–11 (testifying that Enbridge's goal in the mediation was to obtain a renewal of the easement and that it would have seemed "insincere" to pursue reroute permits at the same time).

42. Enbridge knew that the reroute would cost at least $450 million. *See* Expert Report of Dan Leistra-Jones ("Leistra-Jones Report"), Dkt. 583, at PDF p. 23 (depicting proposed inner reroute and quoting Enbridge-commissioned report from 2021 stating that the reroute was estimated to cost $450 million); *see also* Narrative Summary of Dep. of Enbridge 30(b)(6) Witness Robert Yaremko, Dkt. 542, at 5 (quoting 30(b)(6) witness as responding in his August 2022 deposition to a question about the current estimated cost of the "inner reroute" by saying, "I believe Enbridge has publicly disclosed an estimated cost of 450 million").

43. Enbridge benefited to the tune of about $25 million each year that it delayed construction of the reroute. *See* Leistra-Jones Report, Dkt. 583, at PDF p. 27 (calculating that, based on Enbridge's time value of money, Enbridge will have gained $296,234,750 by delaying its $450 million expenditure from 2013 until 2025, or $272,070,977 by delaying the expenditure from 2013 until 2024).

44. After Enbridge submitted its permit request and publicly announced its intent to reroute the pipeline, internally Enbridge executives were analyzing the financial benefits to be gained from further delays. *See* Wetmore Testimony, Dkt. 610, at 19:21–23:18 (testifying about Exhibit 376, a March 24, 2020 email that stated that "[w]hether to go to the board with the reroute in May, [President of Liquid Pipelines Vern Yu] does not want to take the project to board in May, given the status of the tunnel and fluidity of the drivers across both projects," and that "[t]he project team is working on analysis of leavers [sic] to defer, slash, optimize spend without relaxing schedule in addition to assessing cost-savings benefits through possible delay scenarios"); *id.* at 23:15–18 ("Q: [D]o you have any reason to doubt that the instruction had been given to assess the potential benefit to potentially delaying the reroute? A: It looks to me like there was a request for that.").

G. A Rupture Poses a Catastrophic Threat to the Broader Public.

45. A full-bore rupture (FBR) of Line 5 at the Bad River meander would result in 21,974 barrels (922,908 gallons) of oil entering the Bad River, which is located 16 miles upstream of Lake Superior. *See* Expert Rebuttal Report of Matthew Horn, Dkt. 478, at PDF p. 18 (Enbridge FBR scenarios use 21,974 barrels (922,908 gallons)); *id*. at PDF p. 53 ("FBR volumes for each hypothetical release location along the pipeline were provided to RPS by Enbridge on August 4, 2020 and depended on pipeline flow rate, shutdown time, the type of product being released, and the elevation profile of the pipeline. FBR release volumes were calculated to include active pump out during a 13-minute identification of the

rupture, analysis of the pipeline condition, pipeline shutdown and full valve closure in the affected pipeline section, as well as the gravitational drain down once the valves were closed."); WWE Report, Dkt. 268, at PDF p. 27 ("The meander in question is located approximately 16 miles upstream (south) of Lake Superior on the Bad River (Figure ES-1).").

46. If Line 5 were shut down but not purged at the time of a rupture at the meander, 20,000 barrels (840,000 gallons) of oil would be released into the Bad River. *See* Wetmore Testimony, Dkt. 608, at 65:2–9 (valves used to shut down portion of Line 5 that transects Bad River Reservation are located 14 miles apart on either side of the Reservation); *id.* at 85:4–86:23 (Line 5's maximum volume between those two valves is approximately 20,000 barrels (840,000 gallons)); Tetteh-Wayoe Testimony, Dkt. 608, at 4:5–8 (purge time).

47. The 2010 spill at Enbridge's Line 6B resulted in 20,080 barrels (873,600 gallons) of crude oil entering Talmage Creek and the Kalamazoo River. *See* WWE Report App. D, Dkt. 484-7, at PDF p. 45; WWE Report App. I, Dkt. 484-12, at PDF pp. 12–14.

48. Under the spill scenarios evaluated by both Parties' experts ranging from roughly 2,000 to 22,000 barrels, a spill at the meander would rapidly spread downstream, devastating not only the Bad River watershed but also large swaths of the Kakagon-Bad River Slough complex *and* Lake Superior. *E.g.*, WWE Report, Dkt. 268, at PDF p. 40; WWE Report, Dkt. 268-2, at PDF pp. 18, 23, 63, 64, 75; Expert Report of Joshua Anderson, Dkt. 487-2, at PDF pp. 6–8, 10–12 (figures showing results of oil spill scenario modeling in Lake Superior); *id.* at PDF p. 16; Expert Rebuttal Report of Matthew Horn, Dkt. 299, at PDF pp. 23–26 (figures depicting the time and contact probability); *id.* at PDF pp. 8–9; Horn Rebuttal Report App. A, Dkt. 299-1, at PDF p. 11; *id.* at PDF p. 14; Dep. Testimony of Matthew Horn, Dkt. 348, at 65:1–4.

49. Both Parties' experts developed animated modeling confirming that crude oil would contaminate long stretches of Lake Superior's pristine shoreline. Dkt. 299-2 (Enbridge expert Horn's modeling video of "Surface Oil Concentration and Total Hydrocarbons on the Shoreline," https://www.dropbox.com/s/oqqakgd93xlo0xo/RPS_L5_Lake_Superior_FBR%20%282%29.mp4?dl=0); Dkt. 487-3 (Band expert Anderson's modeling video, https://www.dropbox.com/scl/fo/e3c6zy34xe5izlp7l3lcc/h?dl=0&rlkey=fcpwq9yrvcej6v76lbh1c08ii).

50. A rupture of Line 5 at the Bad River meander poses a catastrophic threat to the public. PFF ¶¶ 45–49, 51–53.

51. A pipeline rupture will endanger the Band's commercial and subsistence fisheries, wild rice harvest, and other cultural activities. WWE Report, Dkt. 268-2, at PDF pp. 46–47, 64, 66; Trial Ex. 8 at 5 (maps of Band's hunting and fishing areas).

52. The Band and its members have long relied on fishing, wild rice, medicines, and other plants and animals from the Bad River and Lake Superior. Fish harvest occurs year-round, with many tribal members fishing in the spring and fall as migratory fish enter the Bad River to spawn. Testimony of Dylan Jennings, Dkt. 599, at 71:2–22; Testimony of Joe Dan Rose, Dkt. 599, at 113:1–9, 119:20–121:15.

53. A pipeline rupture poses grave human health consequences. WWE Report, Dkt. 268-2, at PDF pp. 63, 66.

H. The Market Will Adjust in Response to a Line 5 Shutdown.

I. Crude Oil

54. When Line 6B spilled into the Kalamazoo River in 2010, it caused a shutdown of Line 6B (now Line 78) that lasted "several months." Testimony of Neil Earnest ("Earnest Testimony"), Dkt. 610, at 116:3–15.

55. In 2010, Line 6B had a capacity of 240,000 barrels per day (bpd) of crude oil. *See* Trial Ex. 198 at p. 34 (2014 Q4 Enbridge Energy, L.P. FERC Financial Report FERC Form No. 6: Annual Report of Oil Pipeline Companies and Supplemental Form 6-Q: Quarterly Financial Report) (admitted as Trial Ex. 198) (describing 2012 project to increase capacity of Line 6B from 240,000 bpd to 500,000 bpd).

56. According to Enbridge's expert Neil Earnest, the pipeline shutdown resulting from the Kalamazoo River did not have "sizable price impacts for refined product in the Detroit/Toledo area," which is "consistent with [his] analysis here regarding a Line 5 shutdown." Earnest Testimony, Dkt. 610, at 116:3–15.

57. Mr. Earnest has opined that a shutdown of Line 5 would cause gasoline prices to rise by less than 1 cent per gallon in Michigan and Wisconsin. Expert Report of Neil Earnest ("Earnest Report"), Dkt. 495, at PDF pp. 72–73.[2]

58. Mr. Earnest has opined that a shutdown of Line 5 would cause gasoline prices to rise by 4 to 6 cents per gallon in Ontario. Earnest Report, Dkt. 495, at PDF p. 74.

59. In a typical year, Line 5 transports between 400,000 and 450,000 bpd of crude oil to as many as ten refineries—three in the Detroit-Toledo area, four in Ontario,

[2] This version of Mr. Earnest's report was admitted as part of the trial record per Dkt. 575 (Joint Stipulation as to Exhibits Admitted with Expert Reports) and was filed under seal. However, a redacted public version of Mr. Earnest's report is available at Dkt. 262. All the information for which his sealed report is cited in this Proposed Findings of Fact is visible in the redacted public version, so redactions to information in the report have not been made in this Proposed Findings of Fact.

two in Quebec, and one in Pennsylvania—that constitutes up to 37% of the total volume of crude oil delivered to them. *See* Expert Report of Sarah Emerson ("ESAI Report"), Dkt. 265-1, at PDF pp. 15, 17.

60. Line 78 delivers crude oil to the same refineries as Line 5. *See* Earnest Report, Dkt. 495, at PDF p. 49; ESAI Report, Dkt. 265-1, at PDF p. 17.

61. Mr. Earnest testified that Line 78 presently operates at about 100,000 bpd below capacity and that, if Line 5 were to shut down, that available capacity would be utilized to convey oil to the same refineries already receiving oil from one or both pipelines. *See* Earnest Testimony, Dkt. 610, at 99:11–20.

62. Currently, the Montreal Suncor and the Quebec Valero refineries together receive about 201,000 bpd of crude oil from Enbridge and about 107,000 from waterborne deliveries. *See* ESAI Report, Dkt. 265-1, at PDF pp. 20, 38; *see also* Earnest Testimony, Dkt. 610, at 101:14–17 (agreeing that "the Valero refinery continues to take a substantial amount of oil from waterborne sources as well as from the Enbridge system.").

63. Before December 2015, when Enbridge's Line 9 flowed from east to west, the Quebec refineries received all their oil from sources other than Enbridge: waterborne vessels unloading crude oil directly at the refineries; the Portland Pipeline, which moved crude oil from waterborne tankers unloaded in South Portland, Maine, directly to the Suncor Montreal refinery; and rail terminals at each of the refineries. *See* Earnest Testimony, Dkt. 610, at 100:23–101:13; ESAI Report, Dkt. 265-1, at PDF pp. 38–39 & n. 40.

64. Transporting crude oil by tanker from the Gulf Coast or the North Sea to Quebec is already cost-competitive with receiving crude oil on the Enbridge system. *See* Expert Rebuttal Report of Sarah Emerson ("ESAI Rebuttal Report"), Dkt. 265-2, at PDF pp. 21–23.

65. The Quebec refineries receiving Line 5 oil have contingency plans to replace that oil by using direct waterborne deliveries and deliveries from the Portland Pipeline (which itself is fed by waterborne tankers). *See* ESAI Report, Dkt. 265-1, at PDF pp. 38–39.

66. Mr. Earnest acknowledged that reverting to full waterborne deliveries would be commercially viable for the Quebec refineries. *See* Earnest Testimony, Dkt. 610, at 101:18–102:2, 130:6–11 (testifying that the Quebec refineries could "viably" "convert to a fully waterborne supply" and that the "probability of [that conversion resulting] in a Quebec refinery closure is remote").

67. The refineries served by Line 5 have rail terminals with capacity to unload between 110,000 bpd and 159,500 bpd of crude oil. *See* ESAI Rebuttal Report,

Dkt. 265-2, at PDF pp. 19–20 & fig. 2 (opining that the refineries collectively have 159,500 bpd of crude oil-by-rail unloading capacity); *see id.* at PDF p. 20 fig. 2 (showing calculation by Mr. Earnest that the refineries have 110,000 bpd of unloading capacity).

68. Mr. Earnest acknowledged that reactivation of rail and tanker unloading facilities could be done "in a relatively short period of time," acknowledging, for example, that Suncor currently "has the capability to restart its rail facility and the Portland Pipeline." Earnest Report, Dkt. 495, at pp. 64–65.

69. In 2019, the crude oil run rates at the Imperial Sarnia and Nanticoke refineries dropped by about 20%—or about 43,000 bpd—below normal rates, due to fire damage at the Sarnia refinery. *See* Earnest Report, Dkt. 495, at p. 65.

70. Ethanol blending requirements in Ontario are expected to reduce demand for refinery-based gasoline in Ontario by 15,000 bpd relative to the 2019 demand figures used by Mr. Earnest, and similar requirements in Quebec are expected to reduce demand by 10,000 bpd. *See* ESAI Report, Dkt. 265-1, at PDF p. 44.

71. Mr. Earnest calculated that by increasing Line 78 usage, reactivating rail facilities, and partially increasing waterborne deliveries by the Quebec refineries, the shortfall would be reduced from about 440,000 bpd to 226,700 bpd, *see* Earnest Testimony, Dkt. 610, at 99:3–100:3, but "[i]f the Quebec refineries were, in fact, to go back to waterborne sources of crude oil, then the shortfall in the Line 5 delivery area would be reduced to 79,000 barrels a day," *id.* at 103:3–8.

72. According to Mr. Earnest's calculations, 68,100 bpd of that 79,000-bpd shortfall would be concentrated in Ontario, *see* Earnest Testimony, Dkt. 610, at 105:22–106:1, and one would "end up with no shortfall in the Detroit/Toledo region," *id.* at 105:16–21.

73. Refineries in Ontario have higher profit margins than refineries in other parts of North America. *See, e.g.*, ESAI Rebuttal Report, Dkt. 265-2, at PDF pp. 25–27; Testimony of Chris Barber, Dkt. 604, at 35:1–20.

74. According to Enbridge, it "would take approximately two to three years and potentially longer" to expand *both* portions of Line 78—Line 78A and Line 78B. *See* Defs.' Objs. and Resps. to Pls.' Fourth Set of Interrogs., Dkt. 399-4, at 5 (admitted as Trial Ex. 421).

75. Whereas expanding Line 78B would require installing new pipe under the St. Clair River, expanding Line 78A alone does not involve laying new pipe but would instead require adding pumping stations. *See id.* (describing actions needed to expand both segments of Line 78, including laying pipeline under St. Clair River but not mentioning the need to lay new pipeline elsewhere); Expert

Report of Graham Brisben ("Brisben Report"), Dkt. 440,[3] at PDF p. 62 ("The Line 78 expansion would mostly involve increasing the pressure of the pipeline by adding compression (vs. replacing with bigger pipe or twinning the pipeline).").

76. Line 78A, the first leg of Line 78, currently has a maximum capacity of 570,000 bpd, and it feeds three smaller lines collectively capable of transporting 680,000 bpd—Line 17 to Toledo (100,000 bpd), Line 79 to Detroit (80,000 bpd), and Line 78B to Sarnia (502,000 bpd, a substantial portion of which can be redirected by other pipelines to Toledo and Detroit). Brisben Report, Dkt. 440, at PDF pp. 61–62.

77. Expanding Line 78A to a capacity of 680,000 bpd or higher would allow Enbridge to use all the available capacity on the pipelines fed by Line 78A, which would increase supply to the Line 78 delivery area by about 110,000 bpd (from 570,000 bpd, which is limited by the current capacity Line 78A, to 680,000 bpd, which would be limited by the capacity of the lines fed by Line 78A). *See* Brisben Report, Dkt. 440, at PDF pp. 61–62.

II. Propane

78. The winter heating season during which the Energy Information Administration tracks residential propane prices is from October to March. *See* Expert Rebuttal Report of Jill Steiner ("Steiner Report"), Dkt. 439,[4] at PDF p. 42 & n.53.

79. Rail is the most common means by which propane and butane are transported from Canada to the United States. *See* Brisben Report, Dkt. 440, at PDF pp. 21–22; Earnest Testimony, Dkt. 610, at 107:22–108:1 (agreeing that "there is a substantial volume of propane that is exported by rail from Canada to the United States").

80. The Superior, Wisconsin area and the Upper Peninsula of Michigan already receive a portion of their propane by rail. *See* Brisben Report, Dkt. 440, at PDF pp. 50, 67; Earnest Report, Dkt. 495, at PDF p. 34 (showing propane-by-rail terminals near Superior and in the Upper Peninsula of Michigan).

[3] As with Mr. Earnest's report, this version of Mr. Brisben's report was entered as part of the trial record and filed under seal, but there is a public version—Dkt. 255-1—providing all the information for which this report is cited in these Proposed Findings of Fact. Accordingly, no redactions have been made to the citations to Mr. Brisben's report in these Proposed Findings of Facts.

[4] As with Mr. Earnest and Mr. Brisben's reports, this version of Ms. Steiner's report was entered as part of the trial record and filed under seal, but there is a public version—Dkt. 254-1—providing all the information for which this report is cited in these Proposed Findings of Fact. Accordingly, no redactions have been made to the citations to Ms. Steiner's report in these Proposed Findings of Facts.

81. Mr. Earnest acknowledged that enough mobile transloaders to replace the propane supply in the Upper Peninsula of Michigan and the Superior, Wisconsin area can be set up in less than six months. *See* Earnest Testimony, Dkt. 610, at 110:8–12; *see also* Steiner Report, Dkt. 439, at PDF p. 57 (explaining how mobile transloaders are used).

82. To replace the entire amount of propane produced by the Rapid River and Superior fractionators, only 4–6 mobile transloaders would be needed. *See* Testimony of Jill Steiner, Dkt. 603, at 95:6–19, 99:10–14 (testifying that the Rapid River area would need to receive 3–4 rail cars per day to make up for propane lost from the Rapid River fractionator and that a portable transloader requires about 4 hours to unload a rail car, in which case 1–2 transloaders running 8–12 hours would be needed to offset the propane production of the Rapid River fractionator); *see id.* at 98:3–7 (testifying that there would need to be 2,100 bpd of propane delivered to the Rapid River area and 3,700 bpd delivered to the Superior area to make up for the loss of fractionator output, in which case the Superior area would require about twice the 1–2 transloaders required by Rapid River to offset the loss of fractionator propane).

83. There exists close to one billion gallons (23 million barrels) of propane- and butane-storage capacity in the Sarnia area. *See* Brisben Report, Dkt. 440, at PDF p. 51.

84. There are several rail facilities with propane- and butane-storage capacity that are either in Sarnia or are near Sarnia and connected to it by a short pipeline. *See* Brisben Report, Dkt. 440, at PDF pp. 25, 67 (describing 336 million gallons—or 8 million barrels—of storage capacity at rail facility in Marysville, Michigan, which is connected by a short pipeline to the Sarnia petrochemical and refining complex); *id.* at PDF p. 26 (describing rail facility in St. Clair, Michigan, with 84 million gallons—or 2 million barrels—of storage capacity that is connected by a short pipeline to Sarnia); Testimony of Graham Brisben, Dkt. 611, at 88:5–21 (explaining that the Sarnia fractionator has rail capacity and a large storage cavern).

85. Michigan relies more heavily on Line 5 and less on rail than Wisconsin, but Wisconsin has had significantly *lower* propane prices than Michigan for over a decade. *See* Steiner Report, Dkt. 439, at PDF p. 43 (comparing prices in Wisconsin and Michigan); Earnest Report, Dkt. 495, at PDF p. 34 (showing propane-by-rail terminals in Wisconsin and Michigan).

86. Mr. Earnest's calculations of propane price increases are premised on the assumption that, instead of replacing Line 5 propane by increasing nearby propane-by-rail unloading capacity, the market will rely on delivering propane by truck from distant locations. *See* Earnest Report, Dkt. 495, at PDF pp. 43–44, 46–47, 104–05.

87. Mr. Earnest projects that a switch to propane deliveries by long-distance trucking would cause an increase in the consumer price of propane of more than 8 cents in each of the affected markets of the Line 5 delivery area. *See* Earnest Report, Dkt. 495, at PDF pp. 104–06.

88. Mr. Earnest and Enbridge's expert Corbett Grainger both opined that there was a propane supply emergency in the winter of 2019–2020, which led to the need for propane deliveries by trucks traveling all the way from Kansas and Texas. *See* Earnest Report, Dkt. 495, at PDF p. 38; Testimony of Corbett Grainger ("Grainger Testimony"), Dkt. 604, at 122:24–124:13.

89. Mr. Grainger acknowledged that the residential price of propane during the period he described as a propane supply emergency was not in fact any higher than in other years. *See* Grainger Testimony, Dkt. 604, at 126:3–9.

90. It may also be possible for the Sarnia fractionator to be reconfigured so that it can receive and fractionate the type of NGLs produced in the nearby Marcellus Shale. *See* Steiner Report, Dkt. 439, at PDF pp. 48–49.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on May 9, 2023, this document was served on all parties or their counsel of record through the CM/ECF system if they are registered users or, if they are not, by placing a true and correct copy in the United States mail, postage prepaid, to their address of record.

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